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# SCIENCE

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THE AMERICAN ASSOCIATION FOR THE  
ADVANCEMENT OF SCIENCE

## MICROORGANISMS OF THE SOIL<sup>1</sup>

SUCH statements as "the soil is not a mere sponge, but is teeming with life" or that "the earth is one of nature's vast laboratories in which microscopical wonder-workers perform incredible experiments" may have been unusual enough at one time to attract attention; but no longer is the presence or performances of these inhabitants of the soil of such novelty as to startle or dismay us. Indeed so accustomed have we become to the idea that each gram of the upper layers of the earth is filled with its millions or billions of bacteria, that the tendency is to ascribe all functions of the soil to its micro-flora and no theory is too bizarre, no miracle too improbable, so long as we may fall back upon the soil bacteria to account for it.

The apologetic statement only a short while ago of a German investigator, that perhaps, after all, the chemical condition of the soil might have almost as much to do with a given condition as the bacteria, illustrates, if nothing else, the great changes that have taken place in our conception of the constitution of the earth's surface during the last twenty years. To attempt to indicate the relative places of the various aspects of science which are concerned in problems of the soil would be as useless as it is impossible, but I might as well say at once that I do not feel that the situation calls for any particular glorification of the biologist. I do not wish to

<sup>1</sup> Presented at the Symposium on Soils at the Washington meeting of the American Association for the Advancement of Science.